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Abstract

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MKM NORMS: ELEMENTARY SCHOOL GRADES 2, 4, AND 6

BY

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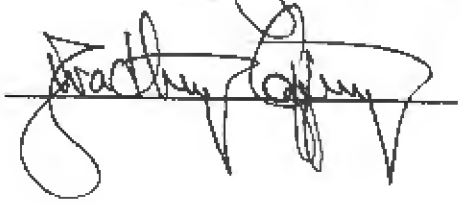
ADVISER SIGNATURE: 

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ABSTRACT:

This research article presents clinical norms for the MKM Monocular and Binocular Reading Test, a stereoscope card test of nearpoint binocular coordination.

108 students in grades two, four, and six were screened. Of these, 93 were tested and normative data were established for monocular and binocular reading speed and errors for each grade level.

The results reveal the presence of a developmental trend with older students demonstrating significantly faster scores with fewer errors. Binocular performance on the test was slower than monocular at all grade levels.

KEY WORDS: MKM Monocular and Binocular Reading Test, Binocular Vision, SORT

INTRODUCTION/TEXT

Of the 51.5 million school-aged children in the United States, an estimated 5 to 15% (2.5 to 7.5 million) have some type of learning disorder.[1] Many diagnostic labels have been developed over the past 30 years for these children: dyslexia, brain injury, minimal brain dysfunction (MBD), hyperkinesis, perceptual defects, and attention deficit disorder (ADD).[1]

It is estimated that, nationwide, one of every six children is two or more grade levels behind in reading.[2,3,4] Optometrists have found that approximately 80% of these "slow readers" have difficulty in control and coordination of their eyes even though most have 20/20 visual acuity.[2]

The MKM Monocular and Binocular Reading Test (see appendix A) was designed in the mid 1960's to detect problems associated with poor binocular coordination and macular suppression. It consists of three cards with appropriate age-related words which are placed in a telebinocular and presented in the order: left eye, right eye, both eyes. As a patient reads the cards aloud, the examiner records any errors and time taken to read each card.

By analyzing each score sheet, the examiner can determine which errors were common to both eyes, or which errors were made with the right or left eye alone. The presence of word reversals (was for saw), vertical reversals (but for put), internal reversals (there for three), and other errors can be noted.

For the two monocular cards, the reading time and the number of errors is expected to be approximately the same for each eye. If the child has good binocular performance, he/she will read all of the words on the last binocular card in the proper sequence without hesitation. If the child has difficulty with binocular fusion, he/she will report that the "words run together". If the child has a tendency toward suppression, (one eye "turns off") he/she will omit words.

If the suppression is constant, generally the right or left eye will be completly suppressed throughout the binocular test. If no suppression is noted and binocular fusion is attained, the binocular reading time can be compared to the monocular part of the test. If the time is appreciably longer under binocular conditions, the presence of a binocular vision

problem is suggested.[5] In cases of strabismus (one eye is misaligned relative to the other) and amblyopia (significantly reduced visual acuity in one eye relative to the other), a complete suppression of the nonfixating eye is expected. These cases require vision training to correct the deviating eye and improve its acuity respectively. In cases of suppression unrelated to strabismus and amblyopia, improved performance is often made possible immediately with the application of plus lenses at near.

Performance norms for the MKM have never been published. Normative scores provided by the test developers are inadequate as they have been based on data acquired from very small samples (n = 15-20 students per grade level) at a private religious school and are averages of monocular and binocular scores.

The purpose of this study was to establish reliable monocular and binocular norms for the MKM regarding reading speed and errors for three grade levels, second, fourth, and sixth, and to determine if developmental trends are present in the tested abilities.

METHOD:

Subjects: A total of 108 students participated in the study from two rural elementary schools in Western Oregon. 93 of the 108 students passed an initial screening: 31 second graders, 32 fourth graders, and 30 sixth graders. An informed consent form, signed by each child's parent/guardian, was required prior to participation in the study.

Procedure: Data were gathered in the following sequence. Specific test protocols follow.

1) Student name, age, grade, and whether the student wears reading glasses.
2) Visual acuity at near
3) Slosson Oral Reading Test
4) MKM
5) Keystone Telebinocular lateral phoria at near

Static Visual Acuity At Near

Instrumentation: Standard Snellen card and occluder

Procedure: Measure and record VA's for OD, OS, and OU at 40 cm.

Passing Criterion: 20/40 or better for each eye

Basic Sight Word Vocabulary

Instrumentation: Slosson Oral Reading Test (SORT) - The SORT consists of a series of grade-appropriate word lists from preschool through high school and is used to ascertain whether a child's sight word vocabulary is at his/her grade level.

Procedure: Begin each child with a list of words appropriate to his/her grade level, held at the child's habitual reading distance. For example, second graders begin with list #2, fourth graders from list #4, and sixth graders from list #6. Occasionally, a child has difficulty calling the word list appropriate to his/her grade level and it is necessary to go to a lower grade level word list. Follow

the standard instruction set on the SORT test sheet (see Appendix B) and allow the child to proceed through the word lists. A child's sight word vocabulary is determined by counting the number of correct responses then multiplying bu .05.

Passing Criterion: Second graders had to have a SORT reading level of at least 1.0 while fourth and sixth graders required at least 3.0. This is due to the fact that there are two sets of MKM cards. Set #1 consists of vocabulary words appropriate for first and second graders; set #2 is for third grade and beyond.

MKM Monocular And Binocular Reading Test

Instrumentation: Keystone Telebinocular and the two sets of MKM cards.

Procedure: Adjust the Telebinocular card holder for near (2.50 D) testing. Seat the child comfortably in front of the stereoscope adjusting the height if necessary. Have the child look into the scope to make sure he/she can see the words. Be certain the correct MKM card set is being used for the childs grade level. Use the standard MKM instruction set (see Appendix B). Record time and errors for each card.

Passing Criterion: Binocular performance on the third MKM card.

Keystone Lateral Phoria At Near

Instrumentation: Telebinocular and Keystone Lateral phoria card (DB9B)

Procedure: Immediately following the MKM test, take a lateral phoria by asking to which number the arrow points.

RESULTS:

Table 1 lists means and standard deviations by grade level for OD, OS, and OU reading time and errors. In all cases means and their standard deviations show a decrease with increasing grade level, indicating better, more consistent performance among older children. Monocularly, no significant differences exist between OD and OS at any grade level. Since OD and OS values were similiar, they were combined as monocular data in table 2.

Table 2 shows a consistent difference ($F>5.5$ in all comparisons, $p<.001$) between monocular and binocular reading times with slower binocular times at each grade level. Also illustrated are significant differences ($F>1.80$ in all comparisons, $p<.02$) for monocular vs. binocular errors with approximately twice as many errors binocularly. These differences are shown graphically in Figures 1 and 2.

Evidence for the presence of an age-related developmental trend on MKM performance is also shown in Table 2. With regard to the monocular data, both time ($F>8.3$, $p<.001$) and errors ($F>4.1$, $p<.02$) show significant improvement with increased age. The predominant effect is due to differences in second graders vs. fourth and sixth graders; fourth and sixth graders show no significant differences on any measure. The binocular data show similar trends for time ($F=9.3$, $p<.001$), however the comparison between grades for binocular errors was not significant ($F=2.3$, $p>.05$).

Scores on the SORT, not suprisingly, showed significant differences ($F=86.7$, $p<.00$) between all grade levels. Subjects in our sample scored approximately 1.5 years above the grade equivalency listed in the SORT norms for each grade level.

Post-test lateral phoria data did not differ ($F=.37$, $p>.05$) between grades.

Table 3 displays SORT raw score means, grade equivalent means, and phoria data per grade level.

DISCUSSION:

As indicated by the data in Tables 1 and 2, means for reading times and errors show a decrease with increasing grade level. This apparent developmental trend demonstrates a visual cognitive maturational effect among the children in our sample, and provides a degree of support for the clinical adage that, "In the second grade, a child is still learning to read, but by the fourth grade is reading to learn." Our data show a significant difference in MKM word-naming fluency between second graders and the older subjects.

Differences in monocular/binocular reading time (30 seconds for grades two and four; 20 seconds for grade six) are also evident in the results. The reduced difference for the sixth graders may reflect visual maturational processes related to stability of binocular fusion. Differences in phoric posture between grade levels were absent and therefore were not responsible for the sixth graders' reduced difference in monocular/binocular scores. The presence of monocular/binocular differences per se suggests that the binocular portion of the MKM places greater overall demands upon the visual system than are present in the monocular portion of the test. This phenomonon is likely due to the reduced fusional stimuli (relative to real-world visual targets) of the binocular MKM test card. Individuals with limited fusional capability or high heterophoria have difficulty with the binocular portion of the MKM and are thus revealed to the clinician in the context of an evaluation procedure related to classroom demands. We calculate the fusional demand of the binocular MKM card to be approximately .8^ base out at the Telebinocular shaft setting of 2.5 D. This demand value may have been designed to counter the effect of proximal convergence, and does not constitute an inordinate fusional demand relative to ortho.

The increased difficulty of the binocular portion of the test was also evident in terms of error frequency. Binocular reading errors were twice those of monocular errors at all grade levels. During the study, some students suppressed on the binocular card and their performance could not be included. Others who experienced difficulty at this point needed simply to rest

their eyes for a moment by looking off into the distance. Once rested, they were able to resume and finish the test satisfactorily.

Subjects in all three grades scored approximately one and a half years better in their basic sight word vocabulary than expected by SORT norms (Table 3). The research was conducted one third of the way into the school year which accounts for roughly a half year advantage. The question remains as to whether the SORT norms have become outdated, or whether the students in our sample are developmentally advanced relative to the SORT norming population.

We conclude that the MKM Monocular/Binocular Reading Test remains a useful test of binocular performance, and has additional utility in demonstrating binocular inefficiency to patients or parents, and in demonstrating improvements in binocularity associated with optometric treatment. The mere presence of monocular/binocular performance differences does not necessarily indicate poor binocular vision, however. The magnitude and character of the differences should be considered in light of other clinical diagnostic data and normative data for the test. We believe that the MKM may be useful also with older children and adults, and suggest the development of a similar test with age-appropriate vocabulary words for these populations.

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Reference Note: The MKM Monocular and Binocular Reading Test can be obtained from:

MKM Reading System
809 Kansas City St.
Rapid City, South Dakota 57701-2698
1-605-342-7223

GRADE	n	OD				OS				OU			
		TIME (SEC.)		ERRORS		TIME (SEC)		ERRORS		TIME (SEC)		ERRORS	
		$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	σ
2	31	123.5	59.3	4.6	5.3	131.2	68.6	4.8	4.9	155.5	70.5	7.4	5.9
4	32	88.6	45.8	2.4	2.5	90.3	35.1	2.8	2.5	117.1	49.9	5.2	4.7
6	30	76.5	30.3	2.2	2.4	77.1	26.4	2.0	2.3	97.8	35.4	4.8	4.0

6

TABLE 1 : NORMS FOR GRADES 2, 4, AND 6.

GRADE	n	MONOCULAR				BINOCULAR			
		TIME		ERRORS		TIME		ERRORS	
		$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
2	31	127.4	63.2	4.7	5.0	155.5	70.5	7.4	5.9
4	32	89.4	40.5	2.6	2.5	117.1	49.9	5.2	4.7
6	30	76.8	28.2	2.1	2.3	97.8	35.4	4.8	4.0

TABLE 2 : MONOCULAR AND BINOCULAR MEANS WITH STANDARD DEVIATIONS

GRADE	SORT			PHORIA	
	RAW SCORE MEAN	ST. DEV	GRADE EQ.	MEAN	ST. DEV
2	69.1	22.0	3.5	4.5	.80
4	113.7	22.4	3.7	4.6	.75
6	148.7	26.5	7.4	4.4	.75

TABLE 3: SORT AND PHORIA DATA BY GRADE

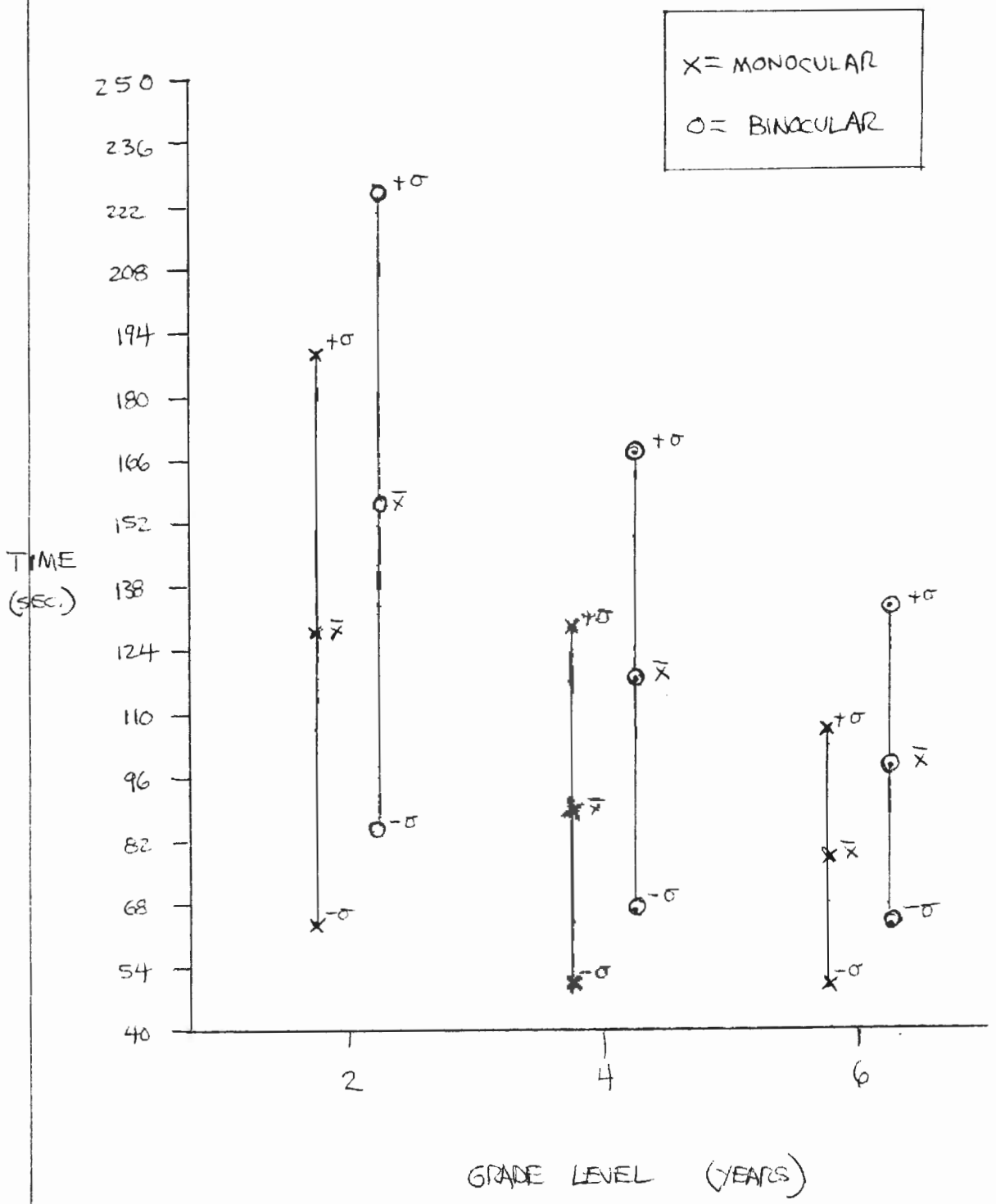

FIGURE 1 MONOCULAR AND BINOCULAR READING TIME MEANS GRAPHED WITH STANDARD DEVIATIONS FOR GRADES 2, 4, AND 6.

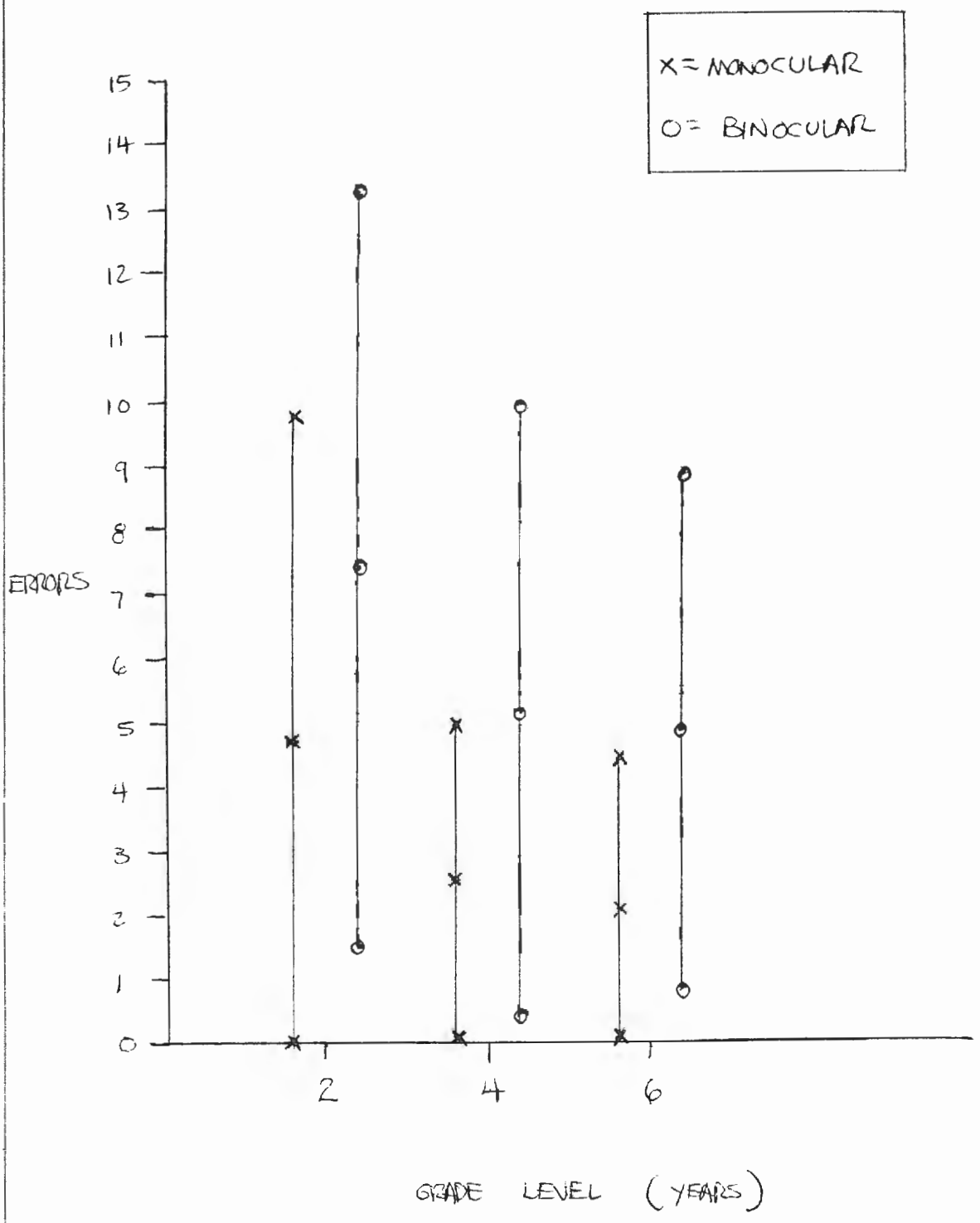

FIGURE 2 : MONOCULAR AND BINOCULAR READING ERROR MEANS GRAPHED WITH STANDARD DEVIATIONS FOR GRADES 2, 4, AND 6.

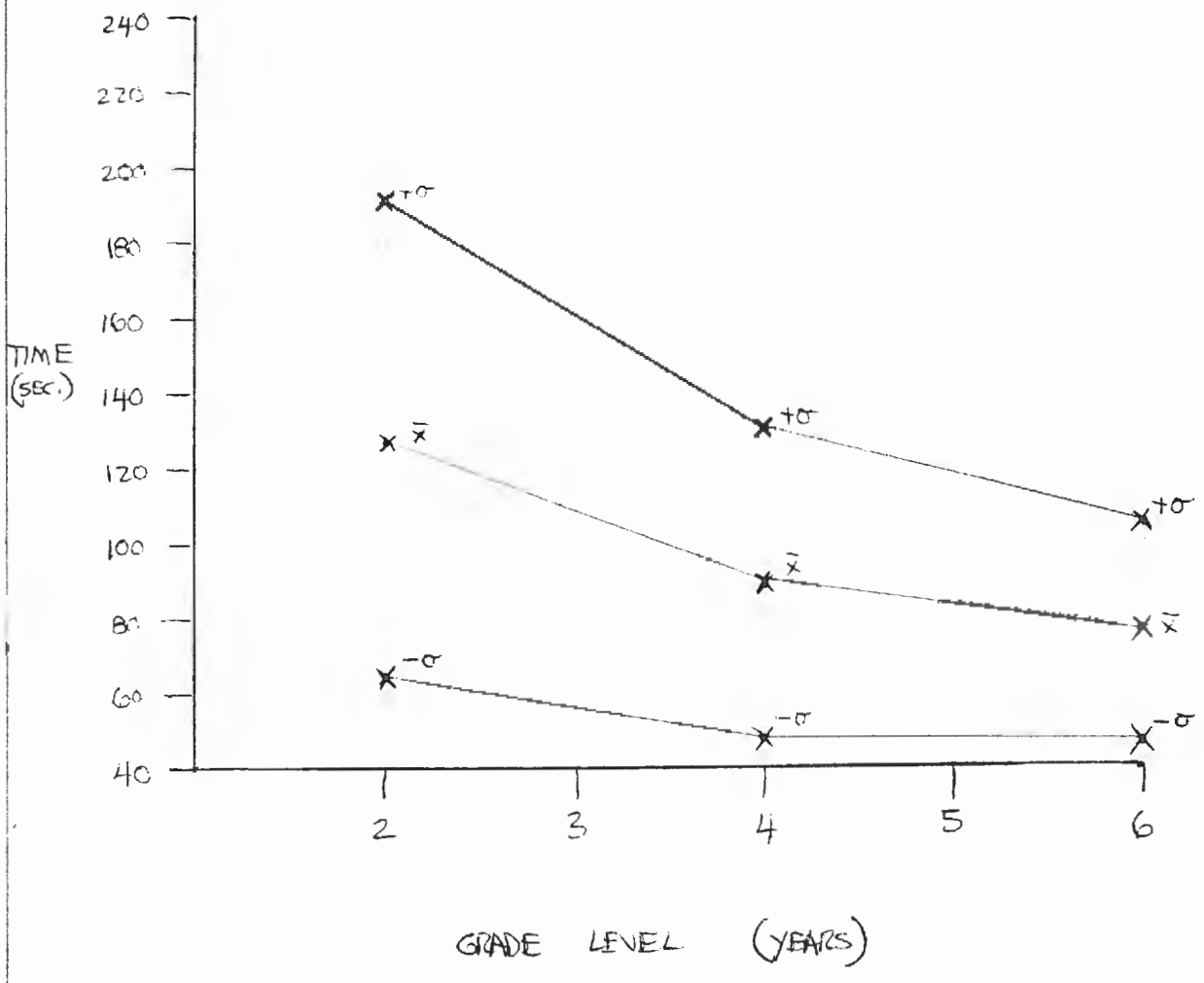

FIGURE 3 MONOCULAR READING TIME MEANS WITH STANDARD DEVIATIONS TO ALLOW PROJECTED MEANS FOR GRADES 3 AND 5.

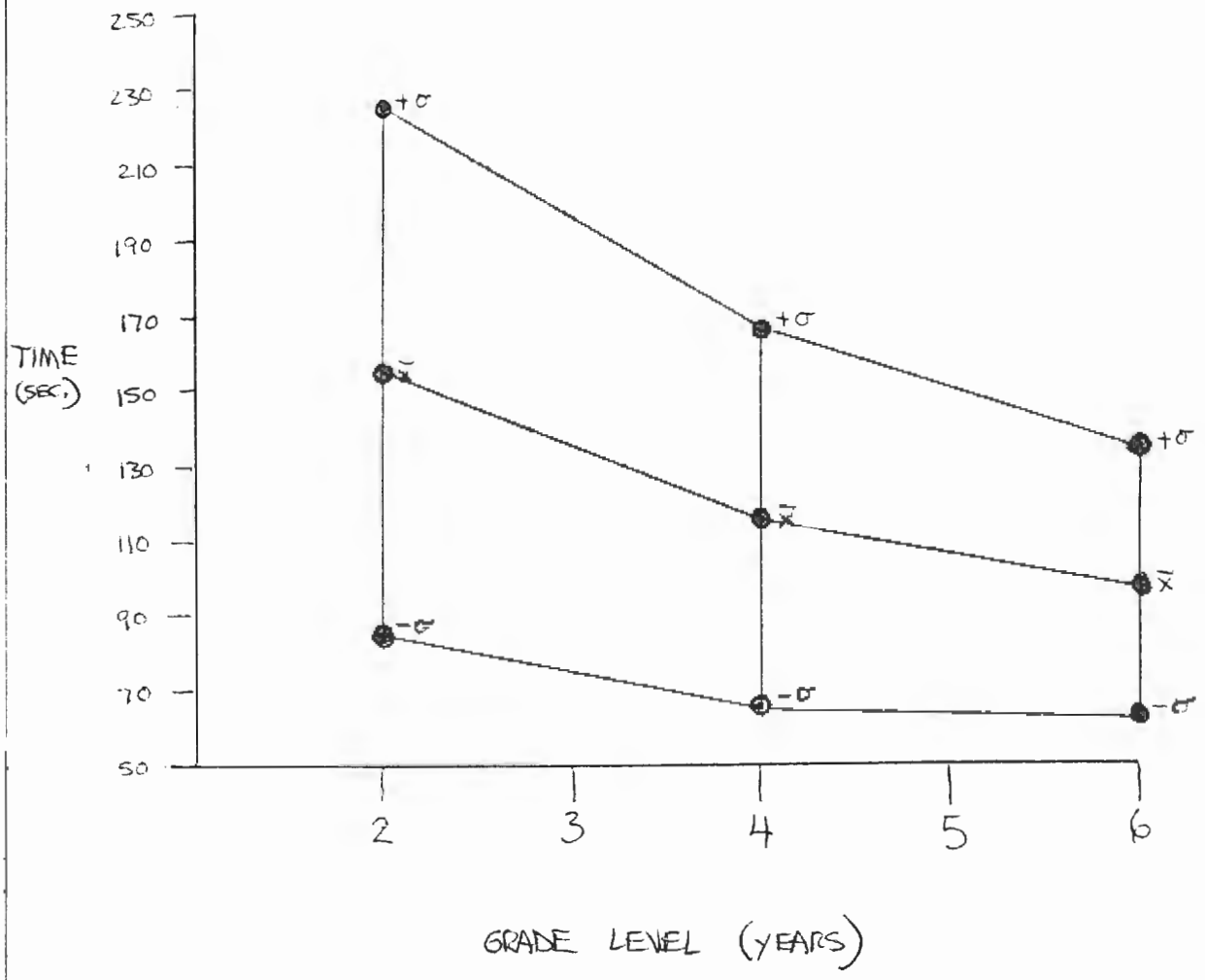

FIGURE 4 BINOCULAR READING TIME MEANS WITH STANDARD DEVIATIONS TO ALLOW PROJECTED MEANS FOR GRADES 3 AND 5.

Set 2 - No. 1

well always got hold
would let eight sing
those before far hurt
much off want made
any sit six why goes
say new does our try
how been were fall
open then keep grow
once sleep gave seven
live ask tell because
wash pick laugh myself
cut very which they
found draw today please
hot better wish kind
small drink now both
clean could where own
light warm write us
pull thank every these
done buy then walk
together or show read
think right first pretty
four most many never
their ate upon work
take start white bring
only just shall round
long fell again best
when about there use

Set 2 - No. 2

use there about when
best again fell long
round shall just only
bring white start take
work upon ate their
never many must four
pretty first right think
read show or together
walk then buy done
these every thank pull
us write warm light
own where could clean
both now drink small
kind wish better hot
please today draw found
they which very cut
myself laugh pick wash
because tell ask live
seven gave sleep once
grow keep then open
fall were been how
try our does new say
goes why six sit any
made want off much
hurt far before these
sing eight let would
hold got always well

Set 2 - No. 3

well always got hold
would eight
those before far hurt
off made
any sit six why goes
say does try
how been were fall
them grow
once sleep gave seven
live tell
wash pick laugh myself
very they
found draw today please
hot wish
small drink now both
could own
light warm write us
every
done buy then walk
or read
think right first pretty
four many
their ate upon work
start bring
only just shall round
long again
when about there use

well always got hold
let sing
those before far hurt
much want
any sit six why goes
new our
how been were fall
open keep
once sleep gave seven
ask because
wash pick laugh myself
cut which
found draw today please
better kind
small drink now both
clean where
light warm write us
thank these
done buy then walk
together show
think right first pretty
must never
their ate upon work
take white
only just shall round
fell best
when about there use

Takes about 3 minutes to give and to score.

SLOSSON ORAL READING TEST (SORT)

Keep this test in safe drawer or file.

This Oral Reading Test is to be given individually and is based on the ability to pronounce words at different levels of difficulty. The words have been taken from standardized school readers and the Reading Level obtained from testing represents median or standardized school achievement. A correlation of .96 (variability on a group of 108 children from first grade thru high school: Gray Mean = 5.0, SORT Mean = 5.0, Gray S.D. = 2.0, SORT S.D. = 2.3) was obtained with the Standardized Oral Reading Paragraphs by William S. Gray, published by The Bobbs-Merril Company, Inc., Indianapolis, Indiana. Permission to use this test by Gray for purposes of validation is deeply appreciated.

A reliability coefficient of .99 (test-retest interval of one week) shows that this Oral Reading Test can be used at frequent intervals to measure a child's progress in reading, providing no specific coaching with these particular words has been given. Such periodic testing can be highly motivating.

DIRECTIONS

1. Allow the child to read from one sheet while you keep score on another. At the start, say the following: *"I want to see how many of these words you can read. Please begin here and read each word aloud as carefully as you can."* (Indicate at what list to start.) *"When you come to a difficult word, do the best you can and if you can't read it, say 'blank' and go on to the next one."*

2. Start a child with a list where you think he can pronounce all 20 words in that one list correctly. Note that each list of words is graded. List P (primer) is for the first few months of first grade, List 1 is for the balance of first grade, List 2 is for second grade, etc. If the starting list is too difficult and the child makes even one mistake, go back until you reach an easier list where he can pronounce all 20 words correctly.

3. After you have found the starting list, go on into more advanced lists until you find the stopping list, where he mispronounces or is unable to read all 20 words. When you reach a point where the words become very difficult, say: *"Look quickly down this list and read the words you think you know."*

4. When a child reads very slowly and takes more than 5 seconds on each and every word, move him along by saying the "blank" for him. Or call out the number of the word at a rate of about 5 seconds each. Still another plan is to use a small card or piece of paper, covering up a word after a 5 second exposure, forcing him on to the next word.

5. Count as an error each mispronounced or omitted word as well as a word which takes more than about 5 seconds to pronounce. (If a child has a speech defect such as a stutter, disregard the 5 second interval and allow as much time as necessary.) Count it an error when a child is uncertain about a word and gives more than one pronunciation, even though one of them may have been correct. Be particularly careful about scoring the word endings as they must be absolutely correct. Keep score by putting a check mark (✓) after each error or a plus sign (+) after each correct word. Enter the number of correct words at the bottom of each list as you go along. An analysis of scatter on the test, as well as an analysis of the types of errors made, will indicate areas of weakness.

6. To find a child's raw score for reading, count the total number of words he was able to pronounce correctly in all lists and add the words below the starting list for which he automatically receives credit. To obtain the Reading Level, look up the value of this raw score in Table 1 below. A simple way to determine the Reading Level is to take half the raw score. For example, if the raw score were 46, half of this number would be 23 and the Reading Level would be 2.3 or the 3rd month of 2nd grade.

TABLE I

CHANGING THE RAW SCORE TO READING LEVEL

(Reading Grade Level is given in years and months. For example, 5.2 means the 2nd month of 5th grade.)

SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE
0-1	0.0	26-27	1.3	52-53	2.6	78-79	3.9	104-105	5.2	130-131	6.5	156-157	7.8
2-3	0.1	28-29	1.4	54-55	2.7	80-81	4.0	106-107	5.3	132-133	6.6	158-159	7.9
4-5	0.2	30-31	1.5	56-57	2.8	82-83	4.1	108-109	5.4	134-135	6.7	160-161	8.0
6-7	0.3	32-33	1.6	58-59	2.9	84-85	4.2	110-111	5.5	136-137	6.8	162-163	8.1
8-9	0.4	34-35	1.7	60-61	3.0	86-87	4.3	112-113	5.6	138-139	6.9	164-165	8.2
10-11	0.5	36-37	1.8	62-63	3.1	88-89	4.4	114-115	5.7	140-141	7.0	166-167	8.3
12-13	0.6	38-39	1.9	64-65	3.2	90-91	4.5	116-117	5.8	142-143	7.1	168-169	8.4
14-15	0.7	40-41	2.0	66-67	3.3	92-93	4.6	118-119	5.9	144-145	7.2	170-171	8.5
16-17	0.8	42-43	2.1	68-69	3.4	94-95	4.7	120-121	6.0	146-147	7.3	172-173	8.6
18-19	0.9	44-45	2.2	70-71	3.5	96-97	4.8	122-123	6.1	148-149	7.4	174-175	8.7
20-21	1.0	46-47	2.3	72-73	3.6	98-99	4.9	124-125	6.2	150-151	7.5	176-177	8.8
22-23	1.1	48-49	2.4	74-75	3.7	100-101	5.0	126-127	6.3	152-153	7.6	178-179	8.9
24-25	1.2	50-51	2.5	76-77	3.8	102-103	5.1	128-129	6.4	154-155	7.7	180-200	H.S.

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6. To find a child's raw score for reading, count the total number of words he was able to pronounce correctly in all lists and add the words below the starting list for which he automatically receives credit. To obtain the Reading Level, look up the value of this raw score in Table 1 below. A simple way to determine the Reading Level is to take half the raw score. For example, if the raw score were 46, half of this number would be 23 and the Reading Level would be 2.3 or the 3rd month of 2nd grade.

TABLE I

CHANGING THE RAW SCORE TO READING LEVEL

(Reading Grade Level is given in years and months. For example, 5.2 means the 2nd month of 5th grade.)

SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE	SCORE	GRADE
0-1	0.0	26-27	1.3	52-53	2.6	78-79	3.9	104-105	5.2	130-131	6.5	156-157	7.8
2-3	0.1	28-29	1.4	54-55	2.7	80-81	4.0	106-107	5.3	132-133	6.6	158-159	7.9
4-5	0.2	30-31	1.5	56-57	2.8	82-83	4.1	108-109	5.4	134-135	6.7	160-161	8.0
6-7	0.3	32-33	1.6	58-59	2.9	84-85	4.2	110-111	5.5	136-137	6.8	162-163	8.1
8-9	0.4	34-35	1.7	60-61	3.0	86-87	4.3	112-113	5.6	138-139	6.9	164-165	8.2
10-11	0.5	36-37	1.8	62-63	3.1	88-89	4.4	114-115	5.7	140-141	7.0	166-167	8.3
12-13	0.6	38-39	1.9	64-65	3.2	90-91	4.5	116-117	5.8	142-143	7.1	168-169	8.4
14-15	0.7	40-41	2.0	66-67	3.3	92-93	4.6	118-119	5.9	144-145	7.2	170-171	8.5
16-17	0.8	42-43	2.1	68-69	3.4	94-95	4.7	120-121	6.0	146-147	7.3	172-173	8.6
18-19	0.9	44-45	2.2	70-71	3.5	96-97	4.8	122-123	6.1	148-149	7.4	174-175	8.7
20-21	1.0	46-47	2.3	72-73	3.6	98-99	4.9	124-125	6.2	150-151	7.5	176-177	8.8
22-23	1.1	48-49	2.4	74-75	3.7	100-101	5.0	126-127	6.3	152-153	7.6	178-179	8.9
24-25	1.2	50-51	2.5	76-77	3.8	102-103	5.1	128-129	6.4	154-155	7.7	180-200	H.S.

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SORT

I want to see how many of these words you can read. Please begin here and read each word aloud as carefully as you can. When you come to a difficult word, do the best you can and if you can't read it say "blank" and go on to the next one.

	List P	List 1	List 2	List 3	List 4	List 5	List 6	List 7	List 8 .	High School
1	see	with	game	safe	harness	cushion	installed	administer	prairies	traverse
2	look	friends	hide	against	price	generally	importance	tremor	evident	affable
3	mother	came	grass	smash	flakes	extended	medicine	enviornment	nucleus	compressible
4	little	horse	across	reward	silence	custom	rebellion	counterfeit	antique	excruciating
5	here	ride	around	evening	develop	tailor	infected	crisis	twilight	pandemonium
6	can	under	breakfast	stream	promptly	haze	responsible	industrious	memorandum	scrupulous
7	want	was	field	empty	serious	gracious	liquid	approximate	whimsical	primordial
8	come	what	large	stone	courage	dignity	tremendous	society	proportional	chastisement
9	one	bump	better	grove	forehead	terrace	customary	architecture	intangible	sojurn
10	baby	live	suddenly	desire	distant	applause	malicious	malignant	formulated	panorama
11	three	very	happen	ocean	anger	jungle	spectacular	pensive	articulate	facsimile
12	run	puppy	farmer	bench	vacant	fragrant	inventory	standardize	deprecate	auspicious
13	jump	dark	river	damp	appearance	interfere	yearning	exhausted	remarkably	contraband
14	down	first	lunch	timid	speechless	marriage	imaginary	reminiscence	contrasting	envisage
15	is	wish	sheep	perform	region	profitable	consequently	intricate	irrelevance	futility
16	up	basket	hope	destroy	slumber	define	excellence	contemporary	supplement	enamoured
17	make	food	forest	delicious	future	obedient	dungeon	attentively	inducement	gustatory
18	ball	road	stars	hunger	claimed	ambition	detained	compassionate	nonchalant	decipher
19	help	hill	heavy	excuse	common	presence	abundant	complexion	exuberant	inadequacy
20	play	along	station	understood	dainty	merchant	compliments	continuously	grotesque	simultaneous

KM grades 1,2

Here is a group of words. They do not make a story so do not try to make any sense out of them. I would like you to keep both eyes open and read these words for me the best you can. If you do not know a word, I will help you, but please try to read every word. I will say..ready, begin....and then I would like you to start reading. Ready, begin.

OD		
lack	one	an
saw	red	some
his	on	will
get	put	it
with	three	over
was	are	its
big	no	soon
for	from	know
ride	yes	cold
own	may	me
did	out	by
low	has	give
him	what	who
that	not	the
up	after	like
went	run	so
stop	here	old
own	fly	away
lind	play	too
ran	came	can
mp	see	call
his	good	is
ive	my	two
eat	at	if
on't	all	and
ome	I	we
of	around	do
but	into	look
elp	be	as
ny	blue	to
she	your	had
ave	said	in
ast	a	you
tle	her	am
ten	carry	go
der	he	green
ake	going	
		OD TIME
		OD ERRORS

OS		
green	he	under
go	carry	ten
am	her	little
you	a	fast
in	said	have
had	your	she
to	blue	funny
as	be	help
look	into	but
do	around	of
we	I	come
and	all	don't
if	at	eat
two	my	five
is	good	this
call	see	jump
can	came	ran
too	play	find
away	fly	down
old	here	stop
so	run	went
like	after	up
the	not	that
who	what	him
give	has	yellow
by	out	did
me	may	brown
cold	yes	ride
know	from	for
soon	no	big
its	are	was
over	three	with
it	put	get
will	on	his
some	red	saw
an	one	black
going	make	
		OS TIME
		OS ERRORS

OU		
black	one	an
saw	red	some
his	on	will
get	put	it
with	three	over
was	are	its
big	no	soon
for	from	know
ride	yes	cold
brown	may	me
did	out	by
yellow	has	give
him	what	who
that	not	the
up	after	like
went	run	so
stop	here	old
down	fly	away
find	play	too
ran	came	can
jump	see	call
this	good	is
five	my	two
eat	at	if
don't	all	and
come	I	we
of	around	do
but	into	look
help	be	as
funny	blue	to
she	your	had
have	said	in
fast	a	you
little	her	am
ten	carry	go
under	he	green
make	going	
		OU TIME
		OU ERRORS

VA OD:

OS:

OU:

Name:_____ Age:_____ Grade:_____ Glasses Worn?:_____